CITRUS AND COFFEE STRAINS OF *XYLELLA FASTIDIOSA* INDUCE PIERCE'S DISEASE IN GRAPEVINE

W.-B Li, C.-H Zhou, USDA-ARS Beltsville, MD 20705
W. D. Pria, Jr., D. C. Teixeira, V. S. Miranda, E. O. Pereira, A. J. Ayres
Fundecitrus, Araraquara, 14807-040, SP, Brazil
C.-X He, P. I. Costa, Institute of Chemistry, UNESP, Araraquara, SP, Brazil
J. S. Hartung, USDA-ARS Beltsville, MD 20705.

Xylella fastidiosa causes citrus variegated chlorosis disease in Brazil and Pierce's disease of grapevines in the United States. Both of these diseases cause significant production problems in the respective industries. The recent establishment of the glassy-winged sharpshooter in California has radically increased the threat posed by Pierce's disease to California viticulture. Populations of this insect reach very high levels in citrus groves in California, and move from the orchards into the vineyards, where they acquire inoculum and spread Pierce's disease in the vineyards. We now show that strains of *Xylella fastidiosa* isolated from diseased citrus and coffee in Brazil can incite symptoms of Pierce's disease after mechanical inoculation into seven commercial *Vitis vinifera* L varieties grown in Brazil and California. Thus any future introduction of the CVC strains of *X. fastidiosa* into the United States would pose a threat to both the sweet orange and grapevine industries. Previous work has clearly shown that the strains of *X. fastidiosa* isolated from Pierce's disease and citrus variegated chlorosis affected plants are the most distantly related of all strains in the diverse taxon *X. fastidiosa*. The ability of citrus strains of *X. fastidiosa* to incite disease in grapevine is therefore surprising, and creates an experimental system with which to dissect mechanisms used by *X. fastidiosa* in plant colonization and disease development using the full genome sequence data that has recently become available for both the citrus and grapevine strains of this pathogen.

ULTRASTRUCTURE OF THE BACTERIOME-ASSOCIATED ENDOSYMBIONTS OF THE GLASSY-WINGED SHARPSHOOTER, *HOMALODISCA COAGULATA* (HOMOPTERA: CICADELLIDAE)

Rosemarie C. Rosell[1] and Heather S. Costa[2]
[1]Biology Department, University of St. Thomas, 3800 Montrose Blvd. Houston, TX 77006
[2]Entomology Department, University of California, Riverside, CA 92507

Light and transmission electron microscopy were used to examine the intracellular endosymbionts of the glassy-winged sharpshooter, *Homalodisca coagulata*. The organisms described are contained within bacteriocytes, forming organs referred to as bacteriomes. In glassy-winged sharpshooter, bacteriomes consisted of paired reddish organs associated with yellow glandular-like structures located in the ventro-lateral anterior portion of the abdomen. Three morphologically distinct bacteria-like organisms were observed. One spherical in shape, one rod shaped, and one larger, highly pleomorphic organism that often appeared elongated. The red portion of the bacteriome appeared to contain only the spherical organisms, while sections of the yellow portion contained all morphological forms. In some cases individual cells in the yellow portion contained more than one type of organism.